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Medical Provider Component
Annual Methodology Report

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Introduction 1

This report describes the data collection activities and results of the 2008 Medical Provider Component (MPC) of the Medical Expenditure Panel Survey (MEPS).

The 2008 MPC sample was drawn from Panel 12 households completing their second year (Rounds 3, 4, and 5) and Panel 13 households completing their first year (Rounds 1, 2, and 3) of study participation. While most activities and procedures carried out for the 2008 MPC did not differ from prior years, efforts were made, as they are each year, to increase the efficiency and quality of the data collection operation.

Chapter 2 of this report describes the activities that occur prior to the start of data collection: sample preparation, forms development, and recruiting and training of staff.

Chapter 3 details the data collection activities and describes the data collection protocols for each subcomponent of the MPC: hospitals, SBDs, office-based providers, health maintenance organizations (HMOs), home health providers, institutional care providers, and pharmacies. Also discussed in this chapter are the data abstraction procedures, quality control activities, schedule, and results of data collection. The tables in Appendix A summarize the results of data collection for each MPC year from 1996 through 2008.

This report provides an annual update for MPC data collection activities. For a broader description of all activities associated with the MPC, refer to the MEPS Medical Provider Component Methodology Report 1996-1999.

Preparation Activities for MPC Data Collection 2

This chapter describes activities associated with the startup of MPC data collection. These activities include identification and preparation of the sample for each subcomponent (hospital and office-based providers, pharmacies, and separately billing doctors or SBDs); updating of data collection forms and questionnaires; and recruiting and training of data collection specialists (DCS) and abstractors.

2.1 Sample Selection

2.1.1 Identification in the Household Survey

Providers asked to participate in the MPC are identified by Household Component respondents. The household respondents are asked to identify all medical providers associated with health care services received by each member of the household. Within the Household Component, medical providers are broadly defined to include any type of practitioner contacted by the household for what the household considers to be health care. In addition to hospitals, clinics, HMOs, medical doctors, dentists, and home care providers, the Household Component collects information about care obtained from optometrists, podiatrists, chiropractors, psychologists, and other practitioners. The sample for the MPC is drawn from among specified categories of this wide range of providers.

In general, eligibility for the MPC is restricted to services rendered in a hospital or by (or under the supervision of) a medical doctor or doctor of osteopathy. Services provided by dentists, optometrists, psychologists, podiatrists, chiropractors, and other kinds of health care practitioners who do not provide care under the supervision of a medical doctor or doctor of osteopathy are excluded. Care provided by home care agencies represents an exception to this rule; the sample design includes all care provided through a home care agency. Pharmacies reported as sources of prescription medicines obtained by household respondents make up the final group of MPC respondents.

The following types of providers are considered eligible for the MPC sample.

- **Providers of Hospital-Based Care.** All providers associated with events reported as occurring at a hospital are eligible for the MPC. Included are any providers associated with a hospital outpatient clinic or emergency room event, as well as an inpatient stay.
- **Providers of Long-Term Health Care.** Although the institutionalized population is not the primary target population for MEPS, long-term health care facilities reported by household respondents are included in the MPC data collection.
- **Pharmacies from Which Household Respondents Report Obtaining Prescription Medicines.** Respondents who report obtaining/purchasing one or more prescription medicines during the survey year are asked to identify all of the pharmacies from which they obtained/purchased their medicines.
- **Physicians (Medical Doctors/Doctors of Osteopathy) Associated with Nonhospital Ambulatory Office Visits.** All reported office-based physicians are eligible for the MPC.
- **Separately Billing Doctors (SBDs).** These providers are not identified by household respondents but by MPC hospital respondents. They are identified by the hospital as health professionals who provide care to a patient during an inpatient hospital stay, an emergency room visit, or an outpatient hospital visit. The charges and payments for these services are not included with those reported for the facility by the hospital's patient accounts office.
- **Home Care Agencies.** Any provider associated with a home care agency who provides care in the home of a household respondent is eligible for the MPC. Providers who are not associated with an agency are not included in the MPC.

2.1.2 Provider Coding

The process of relating provider names, addresses, and telephone numbers to an operationally manageable, unduplicated list of MPC sampled providers was carried out in essentially the same manner as in previous years. The first stage of provider coding occurs in the household interview as field interviewers use the online provider directory to identify providers named by the household respondents. The version of the directory distributed on the interviewer laptops has not been updated since MEPS was first fielded in 1996. As a result, the number of providers who cannot be located in the directory has increased over time, and much of the provider coding workload has shifted from the interview to between-round processing at the home office. Home office clerical staff have online access to an enhanced version of the directory, which they use to code any providers not coded during the interview. Providers to whom a new identification number is

assigned at the home office are added to the enhanced version of the directory accessible at the home office.

2.1.3 Authorization Form Acquisition and Processing

The MEPS protocol requires that a signed form authorizing the project to contact a provider be obtained for each person-provider pair identified for the MPC sample. The protocol for obtaining authorization forms from household respondents has remained unchanged, but the content of the form was revised in 2002 to conform to the requirements of the Health Insurance Portability and Accountability Act (HIPAA). This form was revised again in 2007 to remove the patient's Social Security number and to add words about opting out of participation. The form remained stable in 2008.

When the signed authorization form is received at Westat's home office, the image is scanned and the scanned image is printed for the MPC for inclusion in interviewer materials and the electronic image is faxed to the provider.

2.1.4 Sample for Data Year 2008

The 2008 MPC sample was generated from two MEPS household panels: Panel 12 households completing their second year of MEPS and Panel 13 households completing their first year of the study. The Panel 12 portion of the sample was drawn from Rounds 3, 4, and 5 of that panel; the Panel 13 portion was drawn from Rounds 1, 2, and 3.

The total sample is fielded in three main groupings. The first and largest group includes hospitals, office-based doctors (OBDs), home care agencies, HMOs, and long-term care institutions. The second group is the pharmacies, whose authorization form collection schedule differs from that of the other providers. The third is the SBDs, who are identified by the hospitals and fielded as the hospital data collection draws to a close. The providers in each of these groupings are fielded in two or more waves.

The first wave of the 2008 sample, fielded in late February 2009, included hospital, office-based doctors, home care, HMO, and institutional providers identified in the household interviewing rounds that ended in December 2008 (Panel 12, Rounds 3 and 4; Panel 13, Rounds 1 and 2).

Providers identified in the rounds ending in May-June (Panel 12, Round 5 and Panel 13, Round 3) were fielded in July 2009. The authorization form "cutoff" used in prior years was implemented again for the 2008 sample. This "cutoff" allowed the timely fielding of the second wave of the MPC by eliminating, with one exception, person-provider pairs associated with authorization forms received after May 31. The exceptions to this rule were pairs that met the criteria for "targeting"—that is, those expected to be associated with high medical expenditures because of multiple or extended inpatient stays or end-of-life care. Providers associated with a targeted person were fielded even if the authorization form was received after May 31.

The pharmacy sample was fielded in two waves, with the first wave being fielded at the end of May 2009. The pharmacy sample is fielded later in the year than the hospital, OBD, home care, HMO, and institutional providers because pharmacy authorization forms are collected only during the spring rounds each year (Rounds 3 and 5). For the pharmacy sample, the first wave is identified midway through Rounds 3 and 5, at a point when a substantial portion of the interviewing has been completed. For the 2008 sample, the first pharmacy wave was identified as of April 15, 2009; the pharmacies associated with authorization forms signed as of that date were designated as the first wave. Sample review, printing, and assembly were completed to allow data collection to begin the last week of May.

Since the identification of SBDs is dependent upon the completion of hospital data collection, the first waves of SBDs were released in October 2009, when most of the hospital interviewing was complete. The last wave was released in February 2010.

2.1.5 Sample Sizes

Table 2-1 summarizes several aspects of the household design that affect the annual MPC sample. Over the last several years, prior to Panel 12, the number and location of the primary sampling units (PSUs) in which household interviewing occurred, has remained stable at 195. For Panel 12 the number of PSUs (and the location of some) has changed from 195 to 183.

As indicated in Table 2-1, the office-based providers have been subsampled in each of the years shown. Table 2-2 shows MPC sample sizes for data years 2006 through 2008 before and after the subsampling. The subsampling is implemented using the household respondents' characterization of their providers as office-based. The table, however, shows providers as classified for the MPC, which adjusts the household characterization based on the project's experience with the provider in

prior years. These differences between household and MPC characterizations of providers account for the changes shown in the table for providers other than office-based physicians.

Table 2-1. Summary of design factors affecting MPC samples, 2006, 2007, and 2008

	2006		2007		2008	
	Panel 10, Year 2	Panel 11, Year 1	Panel 11, Year 2	Panel 12, Year 1	Panel 12, Year 2	Panel 13, Year 1
No. of PSUs for household sample	195	195	195	183	183	183
No. of household interviews	6,461	7,007	6,781	5,383	5,182	7,648
Subsampling of office-based providers in CAPI	No	No	No	No	No	No
Subsampling of office-based providers after CAPI	Yes	Yes	Yes	Yes	Yes	Yes

As shown in Table 2-2, the components of the MPC sample have remained stable ("Initial Yield" column) over the last two years with some decrease since 2006. There is also some variation, especially among OBDs, in the number of providers fielded. As shown in the "After subsampling" column in the table there were 13,473 OBDs fielded in 2006, 15,273 in 2007, and 10,762 in 2008. This variation is a direct result of the subsampling rates applied.

2.2 Instrument Design

For 2008 data collection, specific calendar year references were updated. In addition to calendar year reference changes, the following changes were made to the Contact Guide and Event Forms:

Contact Guide

- The script within the contact guide for all provider types was changed to allow the data collection specialist to provide the names of the patients to the respondent prior to sending the authorization forms.

Event Form

- The form was changed to allow a maximum of five diagnoses were collected from all provider types except SBD providers and pharmacy providers.
- Diagnosis was deleted from SBD forms.

Table 2-2. MPC sample sizes for data years 2006-2008

	2006		2007		2008	
	Initial Yield	After subsampling	Initial yield	After subsampling	Initial yield	After subsampling
Provider level						
Hospital providers	7,447	5,884	7,110	5,708	6,470	5,126
Office-based providers	27,620	13,473	25,052	15,273	25,537	10,762
HMO providers	333	284	501	316	517	243
Home health providers	655	648	534	516	505	498
Institutional providers	80	80	76	75	81	77
SBDs	21,126	21,126	19,435	19,435	19,262	19,262
Pharmacy providers	8,471	8,471	8,619	8,619	7,799	7,799
Total	65,731	49,966	61,327	49,942	60,171	43,767
Person-provider pair level						
Hospital providers	13,071	11,911	11,220	10,646	11,374	10,672
Office-based providers	37,576	17,139	30,812	19,021	32,546	13,917
HMO providers	694	594	852	621	968	572
Home health providers	719	719	574	572	566	564
Institutional providers	80	80	78	78	81	80
SBDs	31,058	31,058	26,407	26,407	27,496	27,496
Pharmacy providers	21,090	20,090	19,052	19,052	19,678	19,678
Total	104,285	81,591	88,995	76,398	92,709	72,979

- The form was revised such that the "Expecting Additional Payment" payer source categories VA and TRICARE/CHAMPVA/CHAMPUS on all provider type event forms was changed to "VA/CHAMPVA" and TRICARE, respectively, to match the payer source categories used in Household Component data collection.

The MEPS Medical Provider Component Methodology Report 1996-1999 provides a detailed description of each of the data collection instruments.

2.3 Recruiting and Training

2.3.1 Data Collection Specialist (DCS) and Abstractor Recruiting

With 2008 being the last year of the MPC contract, all candidates were recruited through employment agencies. Agencies sent resumes and asked their candidates to call Westat for a screening interview. Candidates who passed the telephone screening were invited for a personal interview, during which they were asked to read a "mini" questionnaire to test their reading ability and their facility for pronouncing common medical terms. References were checked and, if all "checked out" they were invited to training. The number of new DCSs and abstractors recruited was determined by the schedule, sample size, attrition rate, and average hours expected per week by each data collection specialist. In 2009 for the 2008 data year, 25 new abstractor and DCS staff were recruited.

2.3.2 General Overview Training

New DCSs and abstractors are welcomed to Westat with a series of videos and presentations about Westat, about AHRQ, and about MEPS. Each is focused on familiarizing new staff with the MPC and the work they will be doing. Both abstractors and telephone data collection specialists are then trained in general interviewing techniques that introduces new trainees to the basic skills needed for interviewing: gaining respondent cooperation, listening, probing, and conventions for recording answers. General training also includes the AHRQ and Westat mandated training on security and confidentiality as well as the policies and procedures of Westat and MPC operations. Both DCS and abstractor staff attend this training; abstractors because they must make data retrieval and clarification calls.

2.3.3 MPC Project Training for DCSs and Abstractors

For the 2008 MPC, there was just one training session for the office-based and hospital components. This differed from previous years because of a lower than usual attrition rate among current staff and a slightly smaller OBD sample. Staff new to the MPC were trained on OBDs in mid March 2009 and in mid April 2009 for hospitals. The project also conducted refresher training sessions for existing Westat staff for all components, beginning in February, 2009.

The hospital training for new staff included two different types of training: (1) Hospital contact guide training which covered contacting hospital providers, identifying the correct respondent, and sending the appropriate respondent materials and authorization forms and (2) Hospital contact guide *and* event form training, which covered hospital contact guide training as well as administering the event form.

Experienced DCSs and abstractors, those who had been trained and worked on components in prior years, attended refresher trainings for each component to which they were assigned. The refresher trainings were designed to update staff on procedural changes and to hone their skills before beginning work on 2008 data collection.

As the project workload required, DCSs with very strong skills were selected for specialized training to collect data from specific types of providers: institutional and home care providers, large HMOs, and Veterans Affairs facilities. A special training session was conducted to prepare DCSs to collect data from large pharmacy chains. Additional training sessions were held to prepare selected staff for work as editors, provider locators, and refusal and disavowal converters.

The subject matter and presentation styles of the 2008 project-specific training sessions were essentially unchanged from the previous year. Videos, scripts and PowerPoint presentations were all employed during the trainings. Additionally, the camera system (ELMO) was used to capture and project images of the trainer recording on actual forms (not transparencies) onto a screen. Role plays for DCSs and practice abstractions were also conducted.

Data Collection Activities and Results 3

Most of the MPC instruments and procedures used for contacting different types of providers for data year 2008 continued the protocols established during the previous cycles of the survey as described in earlier reports of the methodology series, especially the MEPS Medical Provider Component Methodology Report 1996-1999.

This chapter provides a brief summary of the data collection procedures. Although the chapter focuses primarily on the 2008 cycle of data collection, most of the tables presented cover the years 2006 to 2008. Data for 2006 and 2007 are provided for context and comparison. Tables summarizing results from the first year of MPC data collection through 2008 are presented in Appendix A.

3.1 Data Collection Procedures

The MPC instruments and procedures were designed to support data collection by telephone, but with the flexibility to use mail or fax, as needed, to accommodate respondent preferences. As described in the MEPS Medical Provider Methodology Report 1996-1999, a unique Event Form was developed for each provider/sample type. The Event Forms are variations on a common theme; adaptations were made as needed to collect the core set of MPC data items in different provider settings. The forms collect a common set of data items for each event that occurred during the target calendar year for each MEPS patient seen by the provider.

The MPC event-level data are collected independently of the specific events reported by the household respondents. With the exception of separately billing doctors, discussed in Section 3.1.2, telephone data collection specialists and medical providers are not given the dates of care reported by the household respondents. The medical providers are asked to report all events in their records for the target year, irrespective of what has been reported by the household. The data collection specialists are, however, given a count by event type of the household reports. This count serves as a prompt for the data collection specialist to probe for additional events when the number of events reported by the provider is less than the household report.

The data collection specialist (DCS) uses a Contact Guide to provide structure to the initial conversation with each provider. During the initial contact, the DCS identifies the appropriate respondents within the provider setting, explains the MPC request, mails or sends a fax with authorization forms, and documents steps for proceeding with the data collection.

The following sections describe the MPC data collection protocol and the procedural variations for each provider type.

3.1.1 Hospital Data Collection

The first contact with the hospital is made by a telephone data collection specialist.

In the initial call, the data collection specialist verifies that the number reached is in fact a hospital. If the place is not a hospital, the data collection specialist determines whether the place is eligible for MPC data collection as another type of provider and, if so, documents this fact and prepares the case for interviewing with the appropriate Event Form. If the place contacted is a hospital, the data collection specialist asks to speak to someone in the medical records department, the first of three points of contact in the hospital protocol.

When the data collection specialist reaches a representative in the medical records department, he or she explains the nature of the data collection request and makes arrangements to fax or mail a packet of survey materials. These materials explain the study and identify the patients for whom information is being requested. Copies of the authorization forms signed by the household respondents are also included in the packet. Faxing is the preferred and most frequent mode for sending materials to the hospital because of the speed with which it can be completed and the capability it provides for prompt followup with the hospital contact. Upon ending the call with the medical record department, the data collection specialist asks to be transferred to the patient accounts department to request the remaining data items—services provided, charges, and sources and amounts of payment.

Once medical records and patient accounts are received by the provider, they are logged and sent to "abstraction" where the data are abstracted and recorded in the Event Form as discussed in Section 3.2.

If the medical records and/or patient accounts are not received after a prescribed period of time (which varies according to whether material was faxed or mailed to the respondent), the data collection specialist calls the specific department again and asks them to either send the records or, if they prefer, to collect the data by telephone. If collected by telephone, the data collection specialist asks for an initial set of data items from the medical record department and the patient accounts department for each event in the targeted calendar year. Of note, the medical records department contact is also asked to report the name and specialty of each health professional who saw the patient during the hospital event and who charged for services separately from the hospital's main facility billing. These health professionals, referred to as separately billing doctors or SBDs, constitute the final segment of the MPC sample (discussed in Section 3.1.2). After being identified by the hospital, they are contacted by telephone and asked about the services they provided during the events reported by the hospital. Medical records are the critical source for identifying SBDs.

Upon receipt of medical records and patient accounts, the data collection specialist contacts the hospital's administrative offices to ascertain the billing status of each health professional identified by the medical records department and to obtain locating information for the followup contacts with the providers who billed separately from the facility.

3.1.2 Separately Billing Doctors

The separately billing doctor or SBD portion of the MPC sample is identified not by the household respondents but by MPC hospital respondents. As explained in Section 3.1.1, SBDs are identified by the hospital as health professionals who provide care during a hospital-based event but whose charges and payments are not included in those reported by the hospital's patient accounts office. To capture this critical part of the costs of hospital care, the MPC asks the hospital to identify all health professionals who provide care during each hospital event, to indicate which of these bill separately from the hospital, and to provide contact information for those who bill separately.

Once identified by the hospital, the SBDs enter a stream of processing that prepares them for fielding. As a first step in this processing, MPC edit staff review the completed hospital Event Forms to ensure that the original hospital data collection specialist or abstractor followed the appropriate steps to identify all SBDs associated with each event. Certain kinds of events have a high likelihood of having one or more SBDs. The MPC edit staff verify that the expected SBDs have been identified or that the data collection specialist or abstractor has explicitly noted the hospital's response to probing for information about SBDs. For inpatient surgeries, for example, the hospital

is expected to identify at least a surgeon and an anesthesiologist. If the completed case does not include the expected SBDs or an explanation for the omission, the case is referred back for a retrieval call.

The edited hospital Event Forms are sent for data entry and the information relating to the identification of the SBDs is keyed. Each newly reported SBD is checked against previously reported providers and assigned a provider-level identification (ID) number. The SBD sample is built and unduplicated on a continuing basis as additional hospital cases are completed and keyed. At appropriate points, the project staff define a "wave" of SBD cases, generate case materials and authorization forms for the pairs in the wave, assemble the materials, and incorporate them into the SBD data collection, the schedule for which is discussed in Section 3.5.

Although they are referred to as separately billing "doctors," many of the providers identified in medical records are not doctors but other types of health professionals who bill separately for services provided in a hospital setting. All health professionals who participated in the hospital event and who bill separately are included in the SBD sample for contact. Similarly, many of the ultimate respondents in the SBD data collection are not the offices of physicians or other health professionals, but are billing services. Over time, the SBD sample has included an increasing number of large billing services that manage the records for providers who are widely dispersed geographically.

Processing and fielding of SBDs differ from the procedures for other provider types in several ways. Before a wave of SBDs can be fielded, the providers in that wave must be compared with providers previously fielded in the office-based sample. Because a physician named as an SBD by a hospital may also have been named by the household respondent as a physician seen in an office-based setting, and thus may have already been contacted as an office-based provider, this check is made to avoid duplication in the data collection. If the household respondent reported seeing the physician in an office-based setting, information about the services the physician provided in connection with the hospital event may have already have been obtained in the course of the office-based data collection. The check ensures that information about the event is not collected twice, and that information collected about services in the hospital setting is processed as part of the SBD event data rather than the office-based event data.

To support this check for overlaps between the office-based and SBD samples, cases in each wave of the SBD sample are compared electronically to the office-based sample to identify those that match on patient-provider ID, event type, and event date. Based on the outcome of this check, the

new wave is handled as two waves: one wave with the cases containing events that matched, one wave with those that did not match. For the cases with a match, the office-based data for the event are reviewed to verify the match. If the match is verified, the SBD case is not fielded and the office-based data are used in subsequent SBD processing. Because of differences in the way households and hospitals report the same providers, the electronic matching does not identify all of the overlap cases. Consequently, the cases in the wave that did not match on patient-provider ID are further reviewed for the possibility that the data needed for the SBD were collected in the office-based component, but under a different provider ID. Additional overlap cases are identified through this review.

The SBD data collection protocol also differs from the protocol for office-based physicians in another important way. When an MPC data collection specialist calls an office-based physician, he or she requests information about *all* events in the provider's records for that patient during the survey's target year. SBD data collection, in contrast, focuses on the specific events reported by the hospital. The SBD data collection specialist is provided with the dates of service reported by the hospital and probes specifically for services provided on those dates. Throughout collection and processing, the SBD data are linked to the specific events identified by the hospital.

The authorization form sent to SBDs identifies the hospital as being authorized to release information and, in small print, states that the release includes all providers who supplied services during the hospital event. However, since many respondents do not read the small print DCSs must explain how the authorization form does, indeed, cover the SBDs.

During hospital data collection, the hospital administrative office respondents, who typically are the source of SBD contact information, often cannot say definitely whether a given physician identified in the records for a particular patient does or does not bill separately or whether the physician did or did not bill separately for a specific event for the patient. When the hospital administrative office respondent cannot make this determination, the physician is included in the sample provisionally, pending the outcome of the SBD data collection effort. During SBD data collection, when the data collection specialist learns that a physician did not bill separately, the SBD event created on the basis of the hospital report is assigned an out-of-scope disposition.

3.1.3 Office-Based Physicians

The survey instrument and data collection protocols for office-based providers were designed with the aim of making it possible for a single respondent—a contact in the provider's billing office—to provide all of the requested data items. Whereas access to medical records is essential to the collection of SBD names for hospital events, the office-based provider contact was designed to eliminate the need for direct access to medical records and any requirement for direct involvement of the physician. Typically, all of the requested information is available from the provider's billing records.

The Contact Guide for office-based providers leads the data collection specialist through the process of identifying the place contacted, verifying that services were provided at that location by (or under the supervision of) a physician, and contacting a respondent with access to billing records. Having contacted the billing respondent, the data collection specialist explains the study, solicits cooperation, and makes arrangements to fax or mail the survey documents and authorization forms. If the respondent chooses to provide the billing records by phone, rather than sending them by mail or fax, the data collection specialist makes arrangements to call back to collect the data items. The data collection specialist calls back at the appointed time and collects the detailed event-level information for each MEPS patient who signed an authorization form for the provider.

As with hospitals, more office-based providers are opting to mail or fax patient records rather than provide the requested information by telephone. When billing records are received, they are reviewed and the data elements are abstracted onto data collection forms. Questions that arise are resolved through callbacks to the provider.

3.1.4 Health Maintenance Organizations

Although providers associated with health maintenance organizations (HMOs) share many of the characteristics of office-based physicians and clinics and, in some instances, operate their own hospitals, their distinctive financing arrangements warrant special treatment in the MPC.

A select group of data collection specialists is identified each year to handle contacts with HMOs. They develop familiarity with capitation arrangements, HMO payment practices, and conventions for capturing data on HMO practices within the basic set of MPC Event Forms. They also learn how the records of specific HMOs are organized—when data must be obtained from local offices

or from regional or other centralized locations. Data collection specialization also creates possibilities for continuity in contacts with an HMO from year to year, although HMO staff turnover limits the extent to which this can occur. When collecting data from an HMO respondent, the data collection specialist uses either the hospital or the office-based physician form, whichever is appropriate for the specific event being reported.

3.1.5 Home Care Providers

In general, data collection for home care providers follows the protocol for office-based providers. The data collection specialist uses a home care provider Contact Guide for the initial calls and a provider-type-specific Event Form to collect information about home care events. The home care Event Form has been adapted to capture data that are characteristic of home care providers.

The home care sample presents several special challenges to the data collection effort. The identifying information provided by household respondents is more frequently incomplete for home care providers than for other provider types. Many respondents report their home care providers in personal terms—using the person's name or the kind of care the person provides—rather than in terms of the provider's agency or company. Identifying the appropriate respondent for data collection—the agency or organization that maintains records of the care—is often more difficult with home care providers than with other provider types. Household respondents often identify intermediary or referral agencies as the source of their home care rather than the agency itself. When this occurs, the task of locating records for a patient may require contacts with a series of social service providers, local agency representatives, and corporate offices.

What constitutes home care, moreover, is less clearly delineated than other types of health care considered eligible for the MPC. Office-based physician care, for example, must be provided by or under the supervision of a medical doctor or doctor of osteopathy. "Home care," however, is broadly defined for MEPS and can include a wide range of services provided in the home, as long as they are provided because of a recipient's health conditions.

In recent years, the MPC has had to adjust the way it captures payment information when providers report Medicare as a payer. Under the Medicare Home Health Prospective Payment System that went into effect in October 2000, Medicare instituted the practice of paying for approved home care in 2-month increments. The MPC home care form is designed to collect data in monthly increments.

To handle the change in Medicare payments, project staff routinely divide the amount reported by the provider, allocating an equal share to each of the 2 months covered by the payment.

3.1.6 Institutional Care Providers

The institutional care sample of the MPC is identified when household respondents are reported to have had an episode of care in a long-term health care facility. As with other types of providers, the initial contact with the institutional sample is by telephone. In the initial telephone screening, a data collection specialist verifies whether the place is in fact a long-term care facility. Copies of the survey materials and authorization forms are faxed or mailed to the places verified as long-term care providers. This is followed by contacts for the main data collection.

3.1.7 Pharmacy Providers

During the first year of the MPC, the collection of prescription medicine information from pharmacies was carried out as a mail survey, in an operation separate from the main MPC effort. Problems encountered during this first year led to a modification of the data collection approach, shifting to a mixed mode (telephone and mail) in the second year and, in the third and subsequent years, to telephone-based data collection conducted as a subcomponent of the MPC. Since the third year, the pharmacy data collection has followed a protocol similar to that for office-based providers: initial contact by telephone, faxing of introductory materials and authorization forms, and return (by fax or mail) of record-based responses from pharmacies.

A unique feature of the pharmacy data collection is its focus on a request for a "patient profile" (a computer-generated listing of the prescriptions dispensed to a given customer). Most pharmacies routinely make such profiles available to customers on request, and the profiles contain many of the data items most critical to MEPS: name and National Drug Code (NDC) for each medicine, dosage and units, date dispensed, quantity, the customer's out-of-pocket payment, and third-party payments. The request to pharmacies focuses on obtaining these patient profiles. Because many of the profiles are missing critical items (such as third-party payers) or contain idiosyncratic codes whose meaning is not apparent, at least one callback is necessary to clarify or obtain information.

Sampled pharmacies are divided into two major groups for handling: individual retail pharmacies and pharmacies associated with chains. The approach for individual retail pharmacies is essentially

the same as that for office-based providers. A data collection specialist contacts the pharmacy by telephone to identify an appropriate respondent and explain the study. During this call, the data collection specialist explains the nature of the data request, asks about the availability of patient profiles, and discusses the data items available on the profiles. This discussion is intended to limit the need for callbacks to obtain additional explanation after the profiles have been received. Finally, the data collection specialist arranges to mail or fax the authorization forms and other survey documents to the pharmacy. Pharmacies are asked to respond by mailing or faxing the profiles for the designated patients.

Pharmacies associated with chains are approached in one of two ways, with the approach determined by the project's interactions with the chain in prior years. Some chains prefer that the project contact its individual stores to collect the data; in these cases, the data collection progresses the same as with the individual retail stores. Other chains prefer to handle the data request through a regional or central contact. For these chains, the initial contact is by telephone with the corporate or regional office. The project establishes a corporate contact and negotiates cooperation and an arrangement for obtaining the data. In general, the project does whatever is necessary to facilitate the chain's compliance including providing customized hard-copy listings or electronic files identifying the customers who have provided authorization forms. Different chains have chosen to participate in different ways. Some simply suggest that the project directly contact their individual retail outlets, sometimes supplementing that request with an authorizing communication to the outlets. Some chains compile the information from central or regional offices, providing printed patient profiles for all of their reported patients. Other chains request a diskette identifying the patients of interest and the store locations. The diskette and the authorization forms are sent to the corporate office. Some corporate offices return an electronic file of the profile data, while others provide hard-copy documents even though the initial request was by diskette. For 2008 data collection, the MPC worked in collaboration with the MEPS household interviewers to obtain patient profiles directly from the household respondents if the household respondents filled at least one prescription from selected corporate chains.

3.1.8 Veterans Affairs Facilities and Military and Indian Health Service Hospitals

Over time, the project has developed procedures for handling contacts with selected types of providers whose organization or characteristic data require special attention. Although the standard Event Forms are used to collect data from these providers, what these providers can report often

deviates from the most common patterns. Small groups of data collection specialists are trained to handle these cases, which involve providers associated with the U.S. Department of Veterans Affairs (VA), the U.S. military, and the Indian Health Service. Some cases are initially selected for handling by these specialized data collection specialists on the basis of provider names; other cases receive special handling after an initial call identifies them as belonging to one of the relevant groups.

These cases commonly present special problems, examples of which are described below.

- **Problems of Patient Identification.** Most VA and military facilities use the prime beneficiary's Social Security Number (SSN) for medical record and patient account identification. The absence of an SSN from the authorization form causes problems in obtaining the cooperation of facilities that have to rely on another method for identifying the desired records. Facilities whose recordkeeping is based on the SSN of the service member or eligible veteran have more difficulty when the MEPS patient is a dependent, especially a dependent with a different name.

- **Mobility of Medical Records.** When military personnel move, retire, or separate from service, they take their medical records with them. They also remove their records when going to outside providers and sometimes fail to return them to the medical records section. As a result, some MPC cases cannot be successfully completed because the records are not available.

- **Charges and Payments.** There is considerable variation in what these facilities can report as the full established charges for their services. Payment patterns also vary: while there may be no event-specific payments for some eligible patients, for other patients there may be copayments and/or charges to third parties.

For 2007 data collection and again in 2008, AHRQ approved a modification to the way in which VA charge data were collected. For the VA cases where Westat was unable to collect charge equivalents from the provider, Westat coded the services and procedures found in the medical record and used a VA sponsored website to obtain the billing rates established by the VA Chief Business Office.

3.2 Data Abstraction

As explained in Section 3.1.1, the first step in the data collection protocol for hospital providers is to contact the medical records department of the hospital to establish the date(s) of service, the place of service (inpatient, outpatient, emergency, or other), the diagnosis for each date of service, and the names of the SBDs associated with each date of service. Although the original methodology for hospital data collection used telephone contact for collecting these data items, most providers prefer

to send copies of patient records by fax or by mail. Patient accounts departments, like the medical record departments, particularly those in large hospitals, also prefer to send copies of billing records, rather than take the time to report information by telephone. Many nonhospital providers, such as physicians and pharmacists, also often choose to mail/fax records rather than report by telephone. When medical and patient account records are received, the records are sent to the Abstraction Unit where the relevant data items are abstracted from the records and recorded in the appropriate Event Form by skilled abstractors.

Table 3-1 shows the level of the abstraction effort for 2006, 2007, and 2008. The table shows the number of cases ("provider-waves") completed and the number and percentage of these for which records were abstracted for two stages of hospital respondents, for office-based providers, and for SBDs. The percentage of abstraction for medical records within hospitals decreased slightly in 2008 to 87 percent compared to 93.4 percent in 2007 and 91.3 percent in 2006. Abstraction for other provider types increased slightly over the past 3 years with the largest increase occurring with office based doctors with 54.2 percent being abstracted in 2006 and 76.1 percent in 2008.

3.3 Quality Control

Quality control checks are in place at each step of the MPC data collection.

Ten percent of the work of each telephone data collection specialist is silently monitored. Monitors "listen" to telephone contacts to ensure that the Contact Guide and the Event Form questions are being administered and that answers are recorded according to the protocol. Monitoring staff complete an evaluation form during each monitoring session and, following the session, discuss the data collection specialist's performance, providing both positive and negative feedback as needed.

The abstractors' work is verified by re–abstraction. One hundred percent of all new abstractor work is verified during their first two weeks, then, if their work is acceptable, the verification rate is reduced to 10 percent. An evaluation form is completed to note the quality of the work and to identify any items needing clarification. The form is reviewed with the abstractor.

All finalized cases, whether or not they include completed Event Forms, are reviewed by editors. The editors assess the case documents for clarity and legibility of responses and for adherence to the specifications for each question. Editors prepare a Problem Resolution Sheet to inform the data

Table 3-1. Abstraction workload for hospital and office-based providers, 2006, 2007 and 2008*

2006			
		Providers sending records	
Respondent type	Completes	Number	Percent
Hospital—medical records	6,863	6,269	91.3
Hospital—patient accounts	6,863	5,752	83.8
Office-based providers**	10,574	5,735	54.2
SBDs	11,563	5,666	49.0

2007			
		Providers sending records	
Respondent type	Completes	Number	Percent
Hospital—medical records	6,565	6,135	93.4
Hospital—patient accounts	6,565	5,890	89.7
Office-based providers**	12,279	8,887	72.3
SBDs	11,542	5,613	48.6

2008			
		Providers sending records	
Respondent type	Completes	Number	Percent
Hospital—medical records	5,949	5,175	87.0
Hospital—patient accounts	5,949	5,324	89.5
Office-based providers**	8,857	6,724	76.1
SBDs	10,413	5,438	52.2

* Units in the table are "provider-waves," the units used to track cases for data collection. A provider is counted once for each wave of the sample in which it is represented.

**Excludes OBDs worked as hospital cases

collection specialist (or abstractor) of items that need resolution or data retrieval. Five critical items, if blank or containing invalid responses, trigger preparation of a Problem Resolution Sheet: date of service, diagnosis (ICD-9 code), procedure (CPT-4 code), reimbursement type, and total payment by source. Other unusual situations, such as linked events or overpayments, trigger managerial review. Cases for which a Problem Resolution Sheet is prepared are returned to the appropriate data collection specialist (or abstractor) for clarification and, when necessary, for a callback to the provider to retrieve missing or incomplete items. When the cases are returned to the editors after data retrieval, they are reviewed again to make sure that all items on the Problem Resolution Sheet have been resolved. When editing on the case is complete, the Event Forms are sent for data entry. If the data entry process identifies a problem, the case is returned to the editing department for resolution and, if necessary, to the data collection specialist (or abstractor) for further clarification.

The work of the editors is also verified. All work by newly trained editors is verified 100 percent with the rate being reduced as the editor achieves a greater and greater level of proficiency, with the minimum level being 10 percent.

3.4 Data Collection Schedule

The annual expenditure estimates generated from MEPS are derived from a union of the data collected from household and medical provider respondents. The data in a given year's estimates relate to the year in which the data were collected from household respondents. Because the MPC sample is identified during household data collection, medical provider data collection necessarily follows household data collection, and the MPC sample cannot be fully identified until all household interviewing for the target calendar year is complete (the June following the end of the target year).

A major goal of the survey is to make the MEPS data available to users on as timely a basis as possible. By design, the MPC trails household interviewing. It provides the last elements of data content for the annual estimates, and the major processes required to prepare the annual estimates cannot begin until the MPC data collection is complete. Achieving the data delivery goal thus requires that the MPC data collection be started and completed as quickly as possible following household interviewing.

The schedule for fielding the MPC sample is shaped by the data delivery goal in several ways. The MPC sample for a given year is fielded in two or more waves, with the first wave beginning while household interviewing for the data year is still in progress. A first wave of the MPC sample is drawn from the first two rounds of household data collection for the calendar year—from Rounds 1 and 2 of the panel completing its first year and from Rounds 3 and 4 of the panel in its second year. These rounds end by mid-December. The final wave of the MPC sample can be fielded only after the household rounds that close out the calendar year data collection—Round 3 of the panel in its first year and Round 5 of the panel completing its second year—have been completed, which occurs in June. Readying these last elements of the year's MPC sample for data collection is critical to the overall MPC data collection schedule. A minimum of 12 to 14 weeks is needed to build an acceptable response rate for this final part of the sample. The availability of this sample thus sets a minimum bound on how quickly the MPC data collection can end and the MPC data can be made available for processing. In recent years, the project has made steady incremental progress in

reducing the processing time required to field each wave of the sample at the start of data collection operations and in making the MPC data available for processing at the end of data collection.

Table 3-2 summarizes the schedule for MPC data collection for calendar years 2006 through 2008. As reflected in the table, the sample is fielded in three groups with hospitals, office-based physicians, and home care, institutional, and HMO providers fielded as one group and SBD and pharmacy providers fielded as separate groups. For each of the main elements of the data collection, the table shows the start of the first wave of MPC data collection, the end of the final round of household data collection that generated the sample for the year's MPC, the start of the last wave of MPC data collection, the end of the MPC data collection, and the number of waves in which the year's MPC sample was fielded.

Table 3-2. Schedule for MPC data collection, 2006-2008

Year	Provider group	Start of first MPC wave	End of household data collection	Start of last MPC wave	End of MPC data collection	Number of waves
2006	Hospital, etc.*	02/28/07	6/15/07	08/29/07	12/27/07	3
	SBD	11/19/07	6/15/07	03/05/08	04/25/08	5
	Pharmacy	05/08/07	6/15/07	08/06/07	01/08/08	3
2007	Hospital, etc.*	2/28/08	6/15/08	8/18/08	12/15/08	3
	SBD	10/6/08	6/15/08	2/26/09	4/15/09	6
	Pharmacy	6/2/08	6/15/08	8/7/08	12/15/08	2
2008	Hospital, etc.*	3/3/09	6/15/09	7/31/09	12/18/09	3
	SBD	10/16/09	6/15/09	2/2/10	4/15/10	5
	Pharmacy	5/19/09	6/15/09	7/24/09	12/31/09	2

* Includes hospitals, office-based physicians, and home care, institutional, and HMO providers.

3.5 Data Collection Results

3.5.1 Response Rates

Table 3-3 summarizes the provider-level results of the MPC data collection for data years 2006 to 2008. The response rate for the providers in the hospital component increased slightly from 2007 (94.4%) to 2008 (94.6%), HMOs increased from 92.3 to 97.0 percent, homecare providers increased from 88.3 to 90.2 percent, and institutions increased from 93.0 to 93.3 percent. The 2008 response rate for OBDs was also higher than in any previous data collection year increasing to 89.1 percent from 87.5 percent in 2007. The response rate for SBDs was lower than in 2008 than in 2007, 86.0

Table 3-3. Provider-level response rates, for events in calendar years 2006-2008

Provider	Initial sample	Initial sample after subsampling	Final eligible sample	Response rate	Refusal rate	Other nonresponse rate
2006 Providers						
Hospitals	7,447	5,884	5,484	0.941	0.022	0.037
Office-based providers	27,620	13,473	12,062	0.869	0.074	0.057
HMOs	333	284	238	0.920	0.042	0.038
Home care providers	655	648	602	0.856	0.080	0.065
Institutions	80	80	78	0.808	0.115	0.077
SBDs	21,126	21,126	13,013	0.823	0.111	0.066
Pharmacies	8,471	8,471	7,489	0.799	0.149	0.052
Total	65,731	49,966	38,966			
2007 Providers						
Hospitals	7,110	5,708	5,328	0.944	0.023	0.033
Office-based providers	25,052	15,273	13,492	0.875	0.077	0.048
HMOs	501	316	247	0.923	0.036	0.041
Home care providers	534	516	464	0.883	0.060	0.057
Institutions	76	75	72	0.930	0.042	0.028
SBDs	19,435	19,435	12,410	0.874	0.072	0.054
Pharmacies	8,619	8,619	7,760	0.797	0.165	0.038
Total	61,327	49,942	39,773			
2008 Providers						
Hospitals	6,470	5,126	4,776	0.946	0.022	0.035
Office-based providers	25,537	10,762	9,533	0.891	0.067	0.054
HMOs	517	243	198	0.970	0.000	0.031
Home care providers	505	498	446	0.901	0.077	0.032
Institutions	81	77	72	0.944	0.044	0.015
SBDs	19,262	19,262	11,364	0.860	0.097	0.066
Pharmacies	7,799	7,799	7,026	0.756	0.271	0.050
Total	60,171	43,767	33,415			

percent vs. 87.4. The lower rate is a result of a shorter data collection period due to severe weather. The overall pharmacy rate is also lower in 2008 as a result of the continued refusal of a large provider.

Table 3-4 below summarizes the results at the patient-provider pair level. For each event type, the tables show sample size and rates for response, refusals, and other nonresponse.

Table 3-4. Pair-level response rates, for events in calendar years 2006-2008

Patient-provider pair	Initial sample	Initial sample after subsampling	Final eligible sample	Response rate	Refusal rate	Other nonresponse rate
2006 Pairs						
Hospitals	13,071	11,911	10,830	0.934	0.031	0.035
Office-based providers	37,576	17,139	15,274	0.861	0.082	0.056
HMOs	694	594	476	0.903	0.059	0.038
Home care providers	719	719	661	0.847	0.082	0.071
Institutions	80	80	78	0.808	0.115	0.077
SBDs	31,058	31,058	18,699	0.807	0.144	0.049
Pharmacies	20,990	20,990	17,418	0.734	0.196	0.070
Total	104,288	81,591	74,227			
2007 Pairs						
Hospitals	11,220	10,646	9,611	0.929	0.032	0.039
Office-based providers	30,812	19,021	16,713	0.870	0.083	0.047
HMOs	852	621	459	0.919	0.046	0.035
Home care providers	574	572	513	0.887	0.057	0.056
Institutions	78	78	75	0.933	0.040	0.027
SBDs	26,407	26,407	16,660	0.864	0.046	0.090
Pharmacies	19,052	19,052	16,313	0.737	0.217	0.046
Total	88,995	76,397	60,344			
2008 Pairs						
Hospitals	11,374	10,672	9,600	0.943	0.026	0.034
Office-based providers	32,546	13,917	12,2813	0.884	0.077	0.054
HMOs	968	572	449	0.958	0.002	0.042
Home care providers	566	564	502	0.902	0.077	0.031
Institutions	81	80	75	0.947	0.042	0.014
SBDs	27,496	27,498	16,144	0.846	0.133	0.049
Pharmacies	19,678	19,678	17,038	0.706	0.356	0.060
Total	92,709	72,878	56,089			

During the first 2 years of MPC operations, the progress of SBD data collection was tracked at the provider and patient-provider pair levels, the same as for other provider types. Beginning in 1998, SBDs were also tracked at the "node" level, that is, in terms of each SBD reported for each event identified in the hospital data collection. Table 3-5 summarizes the node-level data collection results for 1998 to 2008. The sample losses occurring with the SBD data collection are reflected as the "eligibility rate" in this table.

Table 3-5. SBD node-level response, 1998-2008

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Total nodes	26,421	30,994	33,354	59,910	64,837	56,353	62,131	62,861	74,247	59,862	62,903
Out of scope	10,111	13,811	16,816	30,121	30,463	26,107	30,073	30,181	38,087	31,209	34,332
Net eligible	16,310	17,183	16,538	29,789	34,374	30,246	32,058	32,680	36,160	28,653	28,571
Complete	12,368	12,571	12,691	21,204	23,067	22,274	24,661	25,020	26,491	23,088	22,441
Nonresponse	3,942	4,612	3,847	8,585	11,307	7,972	7,397	7,660	9,669	5,520	6,130
Eligibility rate	0.617	0.554	0.496	0.497	0.53	0.537	0.516	0.520	0.487	0.505	0.452
Completion rate	0.758	0.732	0.767	0.712	0.671	0.736	0.769	0.766	0.733	0.810	0.785

3.5.2 Refusal Rates

Tables 3-6 and 3-7 provide additional information on the refusal component of nonresponse for 2006 through 2008. The units reported in these two tables are "provider-waves," the units used to track providers in the telephone operational management system. A provider reported by patients in both waves of a year's sample is represented twice in these tallies.

Table 3-6 shows the proportion of cases "ever coded a refusal" and the final disposition of cases after conversion. The percentage of "ever coded a refusal" cases over the 3 years represented in the table is fairly consistent with previous years. The conversion rates (the last column in Table 3-6) shows that fully three-fourths of hospital medical records and patient accounts cases initially coded as a refusal during 2006 and 2007 were successfully converted, during 2008 this percentage jumped to 80 percent. Thirty-six percent of SBD cases ever coded a refusal were successfully converted, an increase of 2.6 percent from 2007 and almost 8 percent from 2006. The conversion rate for OBDs is also higher than 2007 (59.8% vs. 51.9%) and the pharmacy rate is higher than 2007 but lower than 2006, 12.3, 5.7, and 16.4 percent, respectively.

As illustrated in Table 3-7, overall, the reasons for final refusals during 2008 data collection are very similar to those cited during 2006 and 2007 data collection.

Figures 3-1 through 3-4 provide a graphic summary of major components of the MEPS MPC data collection over the survey's history. Data elements highlighted in the graphs are at the provider level. The figures show response over time for hospitals (Figure 3-1), office-based providers (Figure 3-2), SBDs (Figure 3-3), and pharmacies (Figure 3-4). The lines on each figure indicate the

- Sample size, as a proportion of the sample fielded in 2002,
- Sample eligibility rate,
- Final completion rate, and
- Final refusal rate.

Table 3-6. Refusal conversion outcomes: Final disposition of cases coded as refusals during MPC data collection, 2006-2008*

		Ever coded refusal		Final disposition of refusals							
				Out of scope		Final refusal		Other nonresponse		Complete	
	Initial sample (N)	N	Percent of initial sample	N	Percent of refusals	N	Percent of refusals	N	Percent of refusals	N	Percent of refusals
2006											
Hospital–medical records	8,041	944	11.7	60	6.4	209	22.1	18	1.9	657	69.6
Hospital–patient accounts	8,041	1,123	14.0	47	4.2	208	18.5	15	1.3	853	76.0
Hospital–admin offices	8,041	266	3.3	32	12.0	199	74.8	2	0.8	33	12.4
Office-based providers	14,058	2,565	18.2	148	5.8	948	37.0	57	2.2	1,412	55.0
Pharmacies	10,917	1,929	17.7	73	3.8	1,509	78.2	31	1.6	316	16.4
SBDs	23,399	3,602	15.4	771	21.4	1,785	49.6	9	0.2	1,037	28.8
2007											
Hospital–medical records	7,738	1,008	13.0	59	5.8	178	17.6	27	2.7	744	73.8
Hospital–patient accounts	7,738	1,223	15.8	79	6.5	179	14.6	21	1.7	944	77.2
Hospital–admin offices	7,738	204	2.6	15	7.3	176	86.3	0	0	13	6.4
Office-based providers	15,943	2,743	17.2	161	5.9	1095	39.9	63	2.3	1424	51.9
Pharmacies	9,767	1,442	14.8	20	1.4	1337	92.7	3	0.0	82	5.7
SBDs	21,172	2,607	12.3	551	21.1	1,167	44.8	17	0.7	872	33.4
2008											
Hospital–medical records	6,932	1,139	16.4	58	5.1	148	13.0	17	1.5	916	80.4
Hospital–patient accounts	6,932	1,277	18.4	60	4.7	148	11.6	39	3.1	1030	80.7
Hospital–admin offices	6,932	180	2.6	14	7.8	140	77.8	0	0	26	14.4
Office-based providers	11,277	1,945	17.2	104	5.3	615	31.6	67	3.4	1159	59.8
Pharmacies	9,334	2,110	22.6	37	1.8	1,770	83.9	43	2.0	260	12.3
SBDs	21,071	2,858	13.6	558	19.5	1,253	43.8	19	0.7	1028	36.0

*Cell entries represent "provider-waves," the units used to monitor telephone data collection operations. A provider is counted in each wave of fielded cases in which it appears.

**The denominator for "ever coded a refusal" includes provider wave cases ever coded an interim refusal (2* or 3*) or a final refusal (H* or R*) without being coded an interim refusal.

***Less than 1 percent.

Table 3-7. Reasons for final refusal, 2006, 2007, and 2008*

	Final refusal	Refusal		HIPAA refusal		Provider will not accept authorization		Respondent revoked authorization		Records archived and resp refuses to retrieve		Records purged from system		System conversion		Other refusal	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
2006																	
Hospitals	209	122	58.4	2	1	44	21.1	24	11.5	1	***	13	6.2	3	1.4	0	0
OBDs	948	704	74.3	4	***	86	9.1	81	8.5	21	2.2	47	5	5	0.5	0	0
Pharmacies	1509	1341	88.9	21	1.4	110	7.3	25	1.7	7	***	3	0.2	2	0.1	0	0
SBDs	1785	1296	72.6	5	***	281	15.7	23	1.3	19	1.1	124	6.9	37	2.1	0	0
Total	4451	3463	77.8	32	***	521	11.7	153	3.4	48	1.1	187	4.2	47	1.1	0	0
2007																	
Hospitals	178	113	63.5	1	***	38	21.3	10	5.6	4	2.2	9	5.1	3	1.7	0	0
OBDs	1095	815	74.4	3	***	137	12.5	74	6.8	2	***	52	4.7	12	1.1	0	0
Pharmacies	1337	1299	97.2	15	1.1	20	1.5	0	0	0	0	1	***	2	***	0	0
SBDs	1167	855	73.3	14	1.2	119	10.2	14	1.2	3	***	126	10.8	36	3.1	0	0
Total	3777	3082	81.6	33	0.8	314	8.3	98	2.6	9	0.2	188	4.9	53	1.4	0	0
2008																	
Hospitals	148	91	61.5	0	***	40	27.0	7	4.7	0	***	4	2.7	1	***	5	3.4
OBDs	615	419	68.1	5	***	97	15.8	66	10.7	1	***	18	2.9	5	***	4	***
Pharmacies	1770	1697	95.9	13	***	35	2.0	19	1.1	0	***	5	***	1	***	0	***
SBDs	1253	852	68.0	22	1.8	169	13.5	19	1.5	1	***	158	12.6	31	2.5	1	0
Total	3786	3059	80.8	40	1.1	341	9.0	111	2.9	2	***	185	4.9	38	1.0	10	***

* Cell entries represent "provider-waves," the units used to monitor telephone data collection operations. A provider is counted in each wave of fielded cases in which it appears.

***Less than 1 percent

Figure 3-1. Hospital providers: Response factors over time

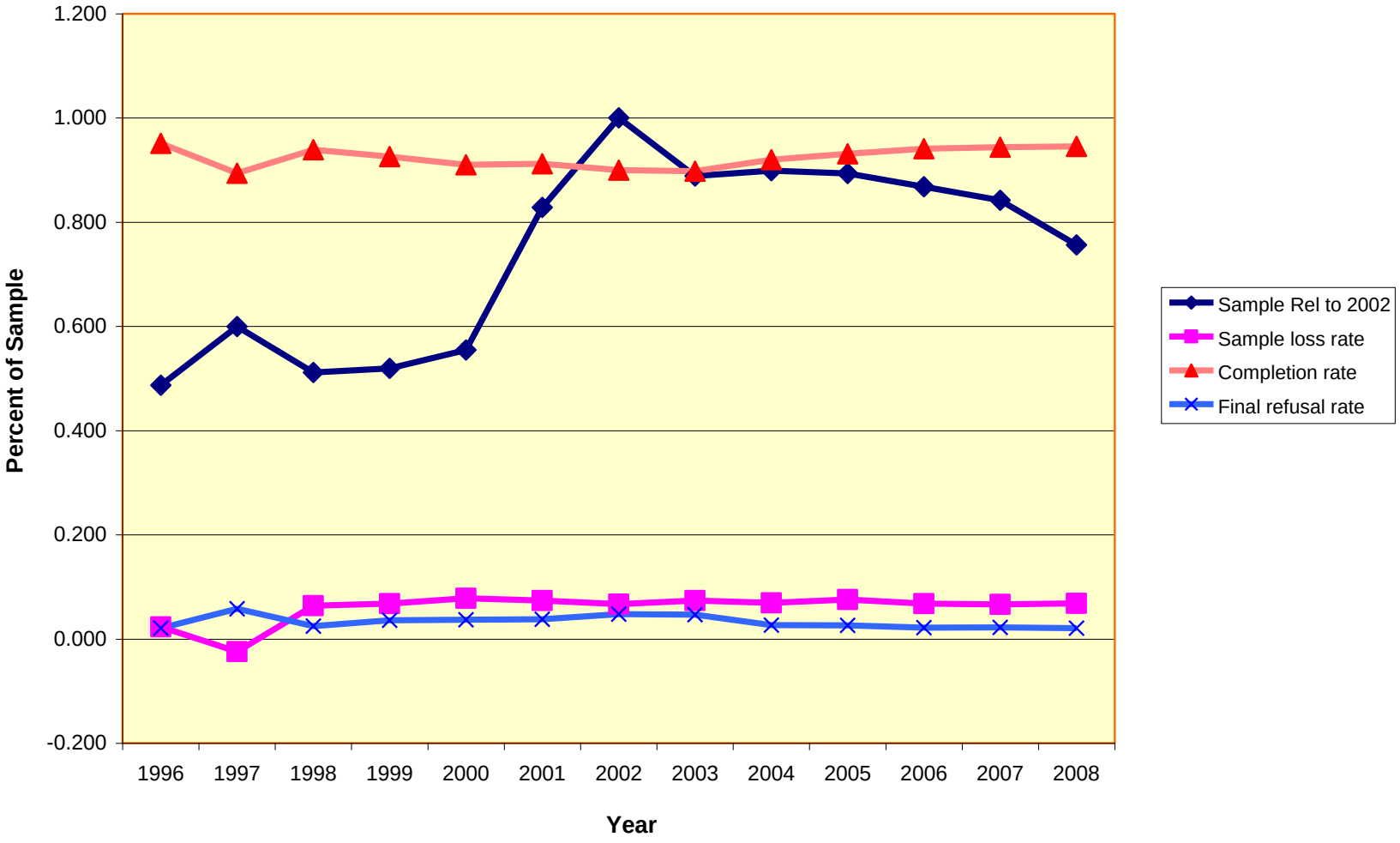


Figure 3-2. Office-based providers: Response factors over time

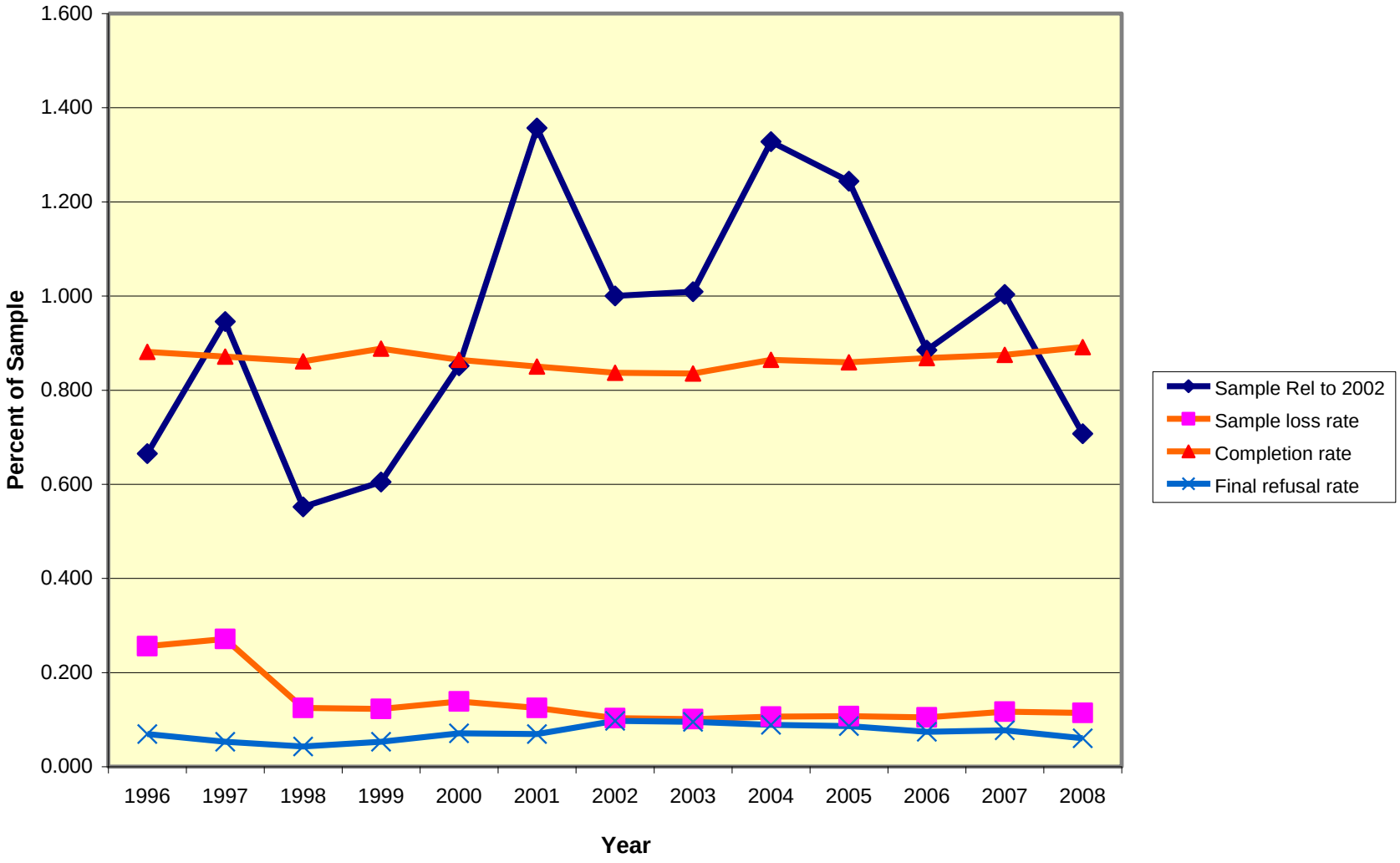


Figure 3-3. SBDs: Response factors over time

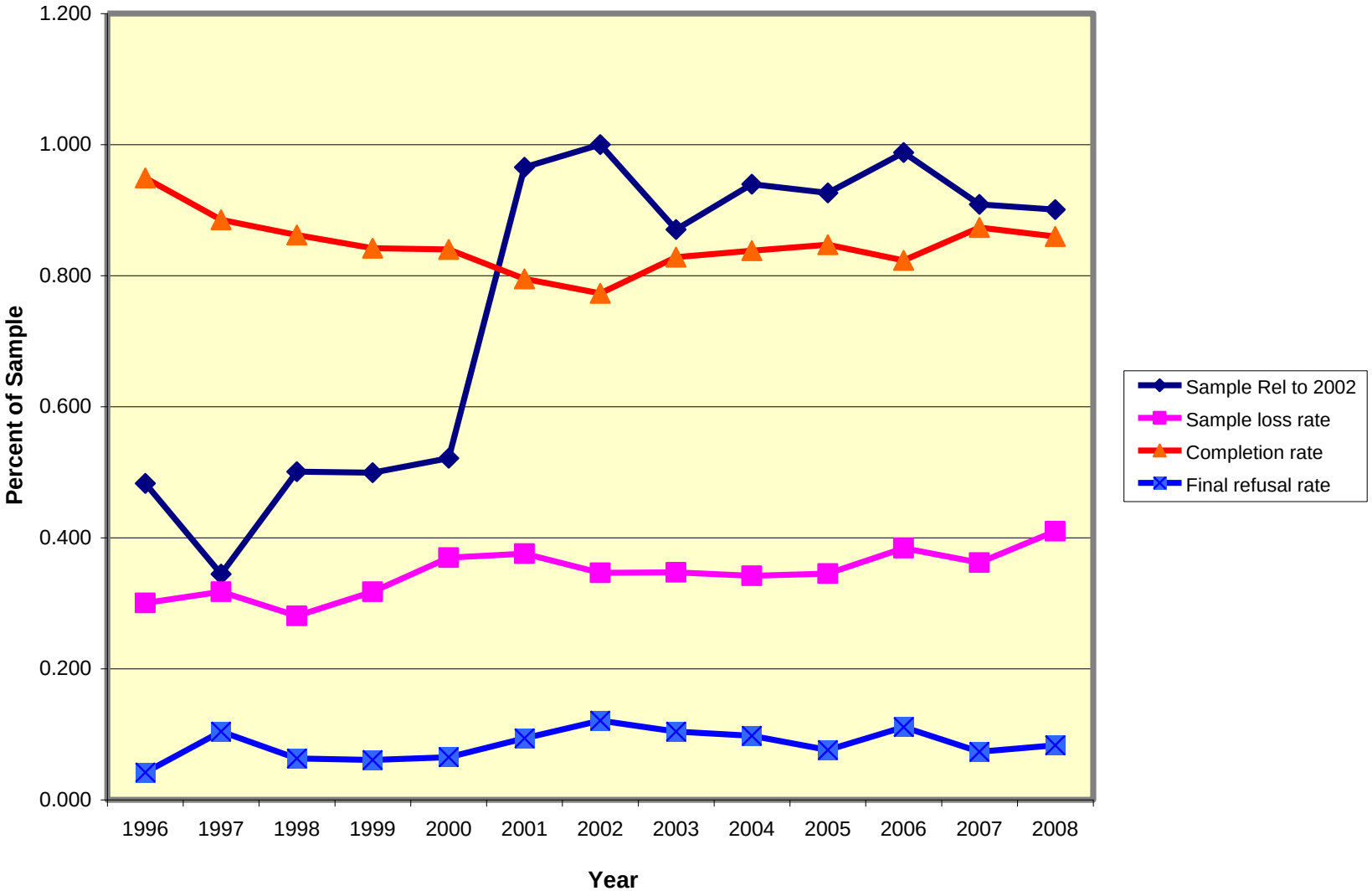
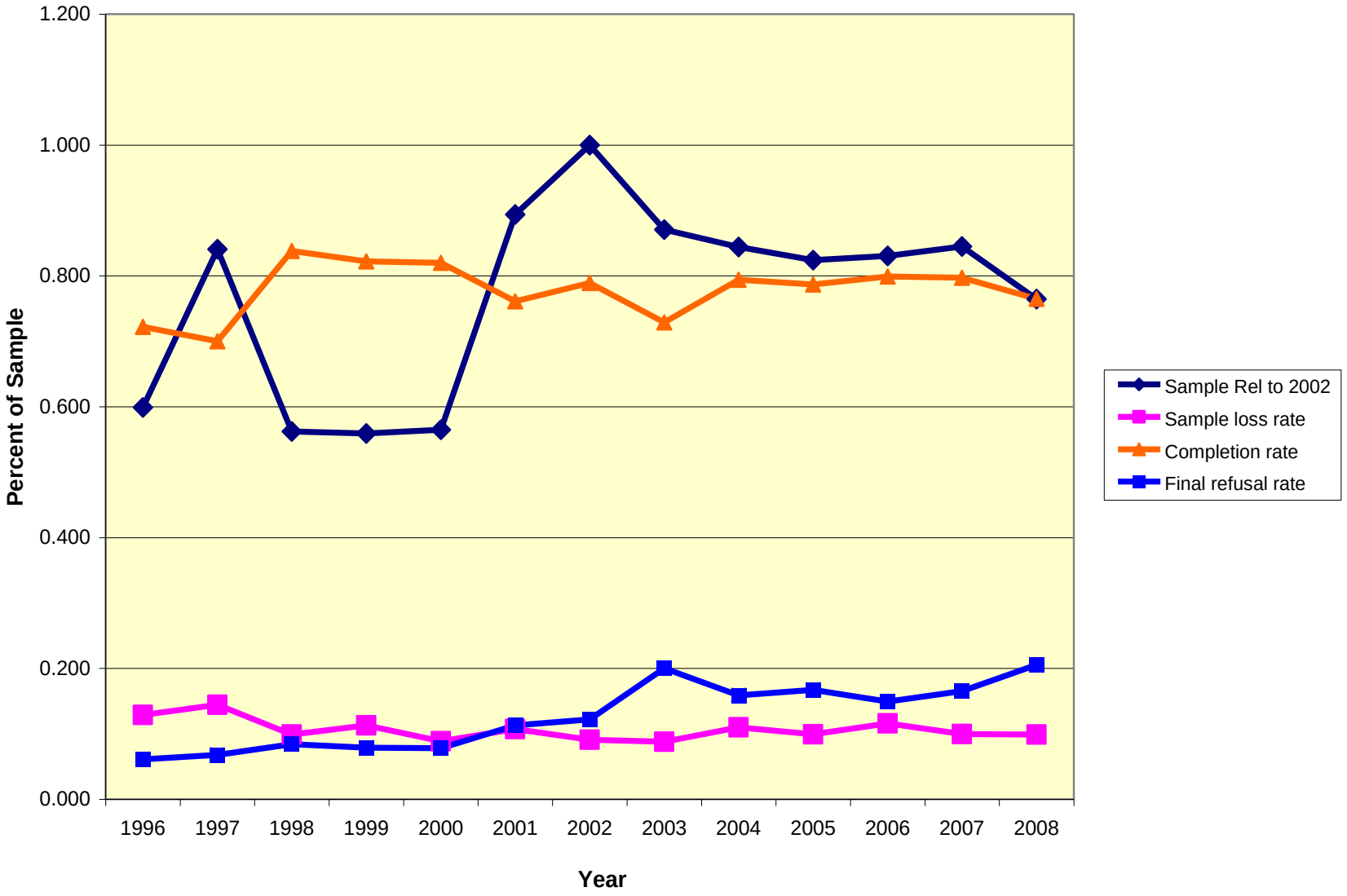


Figure 3-4. Pharmacy providers: Response factors over time



In general, the figures show relatively little fluctuation from year to year in eligibility rates, final completion rates, and final refusal rates despite some very noticeable changes in sample size.

The hospital sample essentially doubled from the 1998-2000 level to a peak in 2002, then dropped in 2003 and has declined slightly each year since. The sample loss rate has been consistent over the years while the completion rate continues to increase moderately each year.

Though there is more fluctuation in the OBD sample than other components as a result of subsampling, there is consistency across the years in the rates of sample loss, completion and refusals.

3.5.3 Timing

The hours per completed MPC provider-pair shown in Table 3-8 include both interviewing and abstracting hours.

Table 3-8. Hours per completed MPC patient-provider pair, 2006-2008

Year	Provider type				
	Hospital	Office-based	Home care	Pharmacy	SBD
2006	8.41	3.33	6.53	0.56	3.56
2007	8.01	3.08	6.80	0.51	3.33
2008	8.84	3.77	6.84	0.49	3.24

Appendix A

MPC Data Collection
Summary Tables 1996-2008

Table A-1. MPC sample sizes, provider level, 1996-2008

	1996	1997	1998	1999	2000	2001
Hospital						
Initial sample	3,301	6,045	4,844	3,520	3,760	6,801
Sample after subsampling	n/a	4,065	3,468	n/a	3,760	5,616
Final in-scope sample	3,330	4,163	3,247	3,284	3,467	5,201
HMO						
Initial sample	296	396	228	247	118	476
Sample after subsampling	n/a	350	171	n/a	118	334
Final in-scope sample	628	467	155	225	113	287
Institution						
Initial sample	59	81	63	52	63	83
Sample after subsampling	n/a	80	69	n/a	63	82
Final in-scope sample	50	75	65	45	60	76
Home care						
Initial sample	415	674	456	393	319	520
Sample after subsampling	n/a	653	420	n/a	319	509
Final in-scope sample	375	579	384	293	281	436
Office-based physician						
Initial sample	10,118	14,646	10,483	9,202	12,962	26,344
Sample after subsampling	n/a	9,663	8,403	n/a	12,962	20,651
Final in-scope sample	7,758	7,047	7,356	8,076	11,167	18,078
SBD						
Initial sample	10,323	14,730	10,711	10,680	11,144	20,644
Sample after subsampling	n/a	7,365	10,711	n/a	11,144	20,644
Final in-scope sample	8,705	5,297	7,704	7,288	7,026	12,891
Pharmacy						
Initial sample	6,109	8,547	5,734	5,703	5,762	9,118
Sample after subsampling	n/a	8,547	5,734	n/a	5,762	9,118
Final in-scope sample	5,321	7,335	5,168	5,058	5,152	8,141

Table A-1. MPC sample sizes, provider level, 1996-2008 (continued)

	2002	2003	2004	2005	2006	2007	2008
Hospital							
Initial sample	8,811	7,806	7,567	7,461	7,447	7,110	6,470
Sample after subsampling	6,780	6,023	6,094	6,059	5,884	5,708	5,126
Final in-scope sample	6,325	5,580	5,671	5,600	5,484	5,328	4,776
HMO							
Initial sample	559	607	420	422	333	501	517
Sample after subsampling	290	280	300	301	284	316	243
Final in-scope sample	256	218	250	241	238	247	198
Institution							
Initial sample	114	81	92	121	80	76	81
Sample after subsampling	110	81	92	116	80	75	77
Final in-scope sample	103	73	89	108	78	72	72
Home care							
Initial sample	631	588	568	606	655	534	505
Sample after subsampling	611	586	556	593	648	516	498
Final in-scope sample	537	527	509	539	602	464	446
Office-based physician							
Initial sample	32,889	28,946	27,617	26,972	27,620	25,052	25,537
Sample after subsampling	15,222	15,361	20,212	18,933	13,473	15,273	10,762
Final in-scope sample	13,652	13,808	18,069	16,898	12,062	13,492	9,533
SBD							
Initial sample	21,385	18,613	20,094	19,810	21,126	19,435	19,262
Sample after subsampling	21,385	18,613	20,094	19,810	21,126	19,435	19,262
Final in-scope sample	13,976	12,154	13,225	12,971	13,013	12,410	11,364
Pharmacy							
Initial sample	10,200	8,882	8,608	8,404	8,471	8,619	7,799
Sample after subsampling	10,200	8,882	8,608	8,404	8,471	8,619	7,799
Final in-scope sample	9,268	8,101	7,663	7,568	7,489	7,760	7,026

Table A-2. MPC sample sizes, pair level, 1996-2008

	1996	1997	1998	1999	2000	2001
Hospital						
Initial sample	6,729	11,694	7,922	6,712	7,849	11,798
Sample after subsampling	n/a	8,192	6,434	n/a	7,849	11,377
Final in-scope sample	6,570	7,938	5,825	6,163	7,016	10,155
HMO						
Initial sample	534	809	436	555	382	965
Sample after subsampling	n/a	n/a	n/a	n/a	382	791
Final in-scope sample	924	911	346	472	324	637
Institution						
Initial sample	63	85	64	53	66	86
Sample after subsampling	n/a	85	70	n/a	66	86
Final in-scope sample	53	80	65	45	63	79
Home care						
Initial sample	461	750	520	394	367	607
Sample after subsampling	n/a	750	491	n/a	367	601
Final in-scope sample	385	662	445	340	317	471
Office-based physician						
Initial sample	13,681	19,157	12,641	11,974	17,407	33,518
Sample after subsampling	n/a	12,635	10,747	n/a	17,407	26,886
Final in-scope sample	10,251	9,632	9,334	10,409	14,935	23,376
SBD						
Initial sample	12,488	17,394	13,658	14,906	15,955	28,905
Sample after subsampling	n/a	8,697	13,658	n/a	15,955	28,905
Final in-scope sample	9,187	6,301	9,691	10,100	9,893	17,529
Pharmacy						
Initial sample	14,531	20,248	12,321	13,183	14,847	22,165
Sample after subsampling	n/a	n/a	n/a	n/a	14,847	22,165
Final in-scope sample	12,146	16,241	10,386	11,317	12,728	19,256

Table A-2. MPC sample sizes, pair level, 1996-2008 (continued)

	2002	2003	2004	2005	2006	2007	2008
Hospital							
Initial sample	16,481	13,876	13,175	12,933	13,071	11,220	11,374
Sample after subsampling	14,477	13,094	12,772	12,601	11,911	10,646	10,672
Final in-scope sample	12,805	11,532	11,589	11,279	10,830	9,611	9,600
HMO							
Initial sample	1,134	939	791	804	694	852	968
Sample after subsampling	567	625	665	685	594	621	572
Final in-scope sample	477	466	514	514	476	459	449
Institution							
Initial sample	116	86	94	123	80	78	81
Sample after subsampling	115	85	94	123	80	78	80
Final in-scope sample	107	77	90	113	78	75	75
Home care							
Initial sample	713	652	610	689	719	574	566
Sample after subsampling	682	641	610	689	719	572	564
Final in-scope sample	606	579	555	619	661	513	502
Office-based physician							
Initial sample	42,327	36,804	34,611	33,854	37,576	30,812	32,546
Sample after subsampling	19,309	19,731	26,392	24,517	17,139	19,021	13,917
Final in-scope sample	17,198	17,692	23,446	21,821	15,274	16,713	12,281
SBD							
Initial sample	30,780	26,965	29,271	28,930	31,058	26,407	27,496
Sample after subsampling	30,780	26,965	29,271	28,930	31,058	26,407	27,496
Final in-scope sample	19,977	17,566	18,694	18,720	18,699	16,660	16,144
Pharmacy							
Initial sample	26,046	22,438	21,720	21,077	20,990	19,052	19,678
Sample after subsampling	26,046	22,438	21,720	21,077	20,990	19,052	19,678
Final in-scope sample	23,057	19,649	18,571	18,159	17,418	16,313	17,038

Table A-3. MPC schedule milestones, 1996-2008

Target year	Provider type	Begin MPC first wave	End household data collection, Round 3/5	Begin MPC last wave	End MPC	Number of waves fielded
1996	Hospital, etc.*	Jan-97	Jul-97	Oct-97	Jan-98	22
	SBD	May-97	Jul-97	Apr-98	Jun-98	6
	Pharmacy	Aug-97	Jul-97	Nov-97	Jun-98	10
1997	Hospital, etc.*	Jun-98	Jul-98	Oct-98	Feb-99	4
	SBD	Feb-99	Jul-98	Apr-99	Jul-99	4
	Pharmacy	Sep-98	Jul-98	Dec-98	Jul-99	3
1998	Hospital, etc.*	Jun-99	Aug-99	Oct-99	Jan-00	3
	SBD	Jan-00	Aug-99	Apr-00	Jul-00	3
	Pharmacy	Oct-99	Aug-99	n/a	Apr-00	1
1999	Hospital, etc.*	May-00	Aug-00	Oct-00	1-Jan	2
	SBD	1-Jan	Aug-00	1-May	1-Jun	3
	Pharmacy	Nov-00	Aug-00	n/a	1-Jun	1
2000	Hospital, etc.*	1-May	1-Jun	1-Sep	1-Dec	2
	SBD	2-Jan	1-Jun	2-Mar	2-Apr	3
	Pharmacy	1-Sep	1-Jun	n/a	2-Jan	1
2001	Hospital, etc.*	2-Apr	2-Jun	2-Aug	2-Dec	2
	SBD	3-Jan	2-Jun	3-Mar	3-May	3
	Pharmacy	2-Aug	2-Jun	n/a	2-Dec	1
2002	Hospital, etc.*	3-Mar	3-Jun	3-Aug	3-Dec	2
	SBD	4-Jan	3-Jun	4-Mar	4-Apr	
	Pharmacy	3-Jun	3-Jun	3-Aug	4-Jan	2
2003	Hospital, etc.*	4-Mar	4-Jun	4-Aug	4-Dec	2
	SBD	4-Nov	5-Jun	5-Feb	5-Apr	3
	Pharmacy	4-Jun	4-Jun	4-Aug	5-Jan	2

Table A-3. MPC schedule milestones, 1996-2008 (continued)

Target year	Provider type	Begin MPC first wave	End household data collection, Round 3/5	Begin MPC last wave	End MPC	Number of waves fielded
2004	Hospital, etc.*	5-Feb	5-Jun	5-Aug	5-Dec	2
	SBD	5-Nov	5-Jun	6-Feb	6-Apr	3
	Pharmacy	5-May	5-Jun	5-Aug	6-Jan	2
2005	Hospital, etc.*	6-Feb	15-Jun	6-Jul	6-Dec	2
	SBD	6-Nov	15-Jun	7-Feb	7-Apr	3
	Pharmacy	6-May	15-Jun	6-Aug	7-Jan	3
2006	Hospital, etc.*	7-Feb	15-Jun	7-Aug	7-Dec	3
	SBD	7-Nov	15-Jun	8-Mar	8-Apr	5
	Pharmacy	7-May	15-Jun	7-Aug	8-Jan	3
2007	Hospital, etc.*	8-Feb	15-Jun	8-Aug	8-Dec	3
	SBD	8-Oct	15-Jun	9-Feb	9-Apr	6
	Pharmacy	8-Jun	15-Jun	8-Aug	8-Dec	2
2008	Hospital, etc.*	3-Mar	15-Jun	31-Jul	18-Dec	3
	SBD	16-Oct	15-Jun	2-Feb	16-Apr	5
	Pharmacy	19-May	15-Jun	24-Jul	31-Dec	2

* Includes office-based, home care, and institutional providers and health maintenance organizations.

Table A-4. MPC data collection results, provider level, 1996-2008

	Initial sample	Initial sample after subsampling	Final eligible sample	Response rate	Refusal rate	Other nonresponse rate
1996 Providers						
Hospitals	3,301	3,301	3,224	0.951	0.021	0.028
Office-based providers	10,118	10,118	7,530	0.881	0.069	0.051
HMOs	296	296	601	0.805	0.085	0.110
Home care providers	415	415	353	0.875	0.062	0.062
Institutions	59	59	50	0.960	0.040	0.000
SBDs	10,323	10,323	7,223	0.949	0.042	0.009
Pharmacies	6,109	6,109	5,321	0.722	0.061	0.217
Total	30,621	30,621	24,302			
1997 Providers						
Hospitals	4,768	4,065	4,163	0.894	0.058	0.048
Office-based providers	10,095	9,666	7,047	0.871	0.053	0.069
HMOs	350	350	467	0.717	0.090	0.193
Home care providers	653	653	579	0.834	0.090	0.076
Institutions	80	80	75	0.827	0.107	0.067
SBDs	14,730	14,730	5,026	0.885	0.104	0.012
Pharmacies	8,574	8,574	7,335	0.700	0.068	0.232
Total	39,250	38,115	24,692			
1998 Providers						
Hospitals	3,468	3,468	3,247	0.939	0.025	0.037
Office-based providers	10,483	8,403	7,356	0.861	0.043	0.096
HMOs	228	171	155	0.871	0.103	0.026
Home care providers	456	420	384	0.820	0.089	0.091
Institutions	63	69	65	0.754	0.169	0.077
SBDs	10,711	10,711	7,707	0.862	0.063	0.075
Pharmacies	5,734	5,734	5,167	0.838	0.084	0.079
Total	31,143	28,976	24,081			

Table A-4. MPC data collection results, provider level, 1996-2008 (continued)

	Initial sample	Initial sample after subsampling	Final eligible sample	Response rate	Refusal rate	Other nonresponse rate
1999 Providers						
Hospitals	3,520	3,520	3,282	0.926	0.036	0.037
Office-based providers	9,202	9,202	8,075	0.888	0.053	0.058
HMOs	247	247	225	0.876	0.080	0.044
Home care providers	338	338	293	0.840	0.082	0.078
Institutions	52	52	44	0.773	0.182	0.045
SBDs	10,680	10,680	7,289	0.842	0.061	0.097
Pharmacies	5,703	5,703	5,058	0.822	0.079	0.099
Total	29,742	29,742	24,266			
2000 Providers						
Hospitals	3,760	3,760	3,467	0.910	0.037	0.054
Office-based providers	12,962	12,962	11,167	0.864	0.071	0.065
HMOs	118	118	113	0.929	0.035	0.035
Home care providers	319	319	281	0.858	0.068	0.075
Institutions	63	63	60	0.850	0.067	0.083
SBDs	11,144	11,144	7,026	0.840	0.065	0.094
Pharmacies	5,762	5,762	5,152	0.820	0.078	0.102
Total	34,128	34,128	27,266			
2001 Providers						
Hospitals	6,801	5,616	5,201	0.912	0.038	0.050
Office-based providers	26,344	20,651	18,078	0.850	0.069	0.081
HMOs	476	334	287	0.899	0.021	0.066
Home care providers	520	509	436	0.851	0.060	0.046
Institutions	83	82	76	0.934	0.079	0.000
SBDs	20,644	20,644	12,891	0.795	0.094	0.111
Pharmacies	9,118	9,118	8,141	0.761	0.113	0.126
Total	63,986	59,197	45,163			

Table A-4. MPC data collection results, provider level, 1996-2008 (continued)

	Initial sample	Initial sample after subsampling	Final eligible sample	Response rate	Refusal rate	Other nonresponse rate
2002 Providers						
Hospitals	8,811	6,780	6,325	0.900	0.048	0.045
Office-based providers	32,889	15,222	13,652	0.837	0.097	0.066
HMOs	559	290	256	0.899	0.055	0.047
Home care providers	631	611	537	0.823	0.093	0.084
Institutions	114	110	103	0.913	0.058	0.029
SBDs	21,385	21,385	13,976	0.773	0.121	0.106
Pharmacies	10,200	10,200	9,268	0.790	0.122	0.088
Total	74,589	54,588	44,117			
2003 Providers						
Hospitals	7,806	6,023	5,580	0.898	0.047	0.055
Office-based providers	28,946	15,361	13,808	0.835	0.095	0.070
HMOs	506	280	218	0.876	0.032	0.092
Home care providers	607	586	527	0.850	0.068	0.082
Institutions	83	81	73	0.945	0.027	0.027
SBDs	18,613	18,613	12,154	0.828	0.104	0.068
Pharmacies	8,882	8,882	8,101	0.729	0.200	0.106
Total	65,443	49,826	40,461			
2004 Providers						
Hospitals	7,567	6,094	5,671	0.92	0.027	0.053
Office-based providers	27,617	20,202	18,069	0.864	0.076	0.060
HMOs	420	300	250	0.892	0.056	0.052
Home care providers	568	556	509	0.809	0.108	0.083
Institutions	93	92	89	0.91	0.056	0.034
SBDs	20,094	20,094	13,225	0.84	0.076	0.084
Pharmacies	8,608	8,608	7,663	0.794	0.159	0.047
Total	64,967	55,596	45,476			

Table A-4. MPC data collection results, provider level, 1996-2008 (continued)

	Initial sample	Initial sample after subsampling	Final eligible sample	Response rate	Refusal rate	Other nonresponse rate
2005 Providers						
Hospitals	7,461	6,059	5,600	0.931	0.026	0.043
Office-based providers	26,972	18,933	16,898	0.859	0.086	0.055
HMOs	422	301	241	0.963	0.012	0.025
Home care providers	606	593	539	0.81	0.111	0.080
Institutions	121	116	108	0.963	0.009	0.028
SBDs	19,810	19,810	12,971	0.846	0.075	0.077
Pharmacies	8,404	8,404	7,568	0.787	0.167	0.046
Total	63,796	54,216	43,925			
2006 Providers						
Hospitals	7,447	5,884	5,484	0.941	0.022	0.037
Office-based providers	27,620	13,473	12,062	0.869	0.074	0.057
HMOs	333	284	238	0.92	0.042	0.038
Home care providers	655	648	602	0.856	0.08	0.065
Institutions	80	80	78	0.808	0.115	0.077
SBDs	21,126	21,126	13,013	0.823	0.111	0.066
Pharmacies	8,471	8,471	7,489	0.799	0.149	0.052
Total	65,732	49,966	38,966			
2007 Providers						
Hospitals	7,110	5,708	5,328	0.944	0.023	0.033
Office-based providers	25,052	15,273	13,492	0.875	0.077	0.048
HMOs	501	316	247	0.923	0.036	0.041
Home care providers	534	516	464	0.883	0.060	0.057
Institutions	76	76	72	0.930	0.042	0.028
SBDs	19,435	19,435	12,410	0.874	0.072	0.054
Pharmacies	8,619	8,619	7,760	0.797	0.165	0.038
Total	61,327	49,943	39,773			

Table A-4. MPC data collection results, provider level, 1996-2008 (continued)

	Initial sample	Initial sample after subsampling	Final eligible sample	Response rate	Refusal rate	Other nonresponse rate
2008 Providers						
Hospitals	6,470	5,126	4,776	0.946	0.022	0.035
Office-based providers	25,537	10,762	9,533	0.891	0.067	0.054
HMOs	517	243	198	0.970	0.000	0.031
Home care providers	505	498	446	0.901	0.077	0.032
Institutions	81	77	72	0.944	0.044	0.015
SBDs	19,262	19,262	11,364	0.860	0.097	0.066
Pharmacies	7,799	7,799	7,026	0.756	0.271	0.050
Total	60,171	43,767	33,415			

Table A-5. MPC data collection results, patient-provider pair level, 1996-2008

	Initial sample	Initial sample after subsampling	Final eligible sample	Response rate	Refusal rate	Other nonresponse rate
1996 Pairs						
Hospitals	6,729	6,729	6,570	0.932	0.038	0.030
Office-based providers	13,681	13,681	10,251	0.865	0.079	0.056
HMOs	534	534	924	0.803	0.105	0.092
Home care providers	461	461	385	0.875	0.057	0.068
Institutions	63	63	53	0.943	0.057	0.000
SBDs	12,488	12,488	8,689	0.937	0.056	0.007
Pharmacies	14,531	14,531	12,146	0.671		
Total	48,487	48,487	39,018			
1997 Pairs						
Hospitals	11,694	8,192	7,938	0.874	0.070	0.056
Office-based providers	19,157	12,635	10,062	0.862	0.062	0.076
HMOs	809	809	911	0.626	0.156	0.218
Home care providers	750	750	662	0.823	0.095	0.082
Institutions	85	85	80	0.825	0.113	0.063
SBDs	17,397	8,697	5,964	0.865	0.123	0.013
Pharmacies	20,248	20,248	16,241	0.672	0.075	0.253
Total	70,140	51,416	41,858			
1998 Pairs						
Hospitals	7,922	6,434	5,824	0.925	0.031	0.044
Office-based providers	12,641	10,747	9,334	0.852	0.050	0.098
HMOs	436	436	346	0.832	0.133	0.035
Home care providers	520	491	445	0.825	0.085	0.090
Institutions	64	70	65	0.754	0.169	0.077
SBDs	13,658	13,658	9,687	0.836	0.084	0.080
Pharmacies	12,321	12,321	10,388	0.793	0.116	0.091
Total	47,562	44,157	36,089			

Table A-5. MPC data collection results, patient-provider pair level, 1996-2008 (continued)

	Initial sample	Initial sample after subsampling	Final eligible sample	Response rate	Refusal rate	Other nonresponse rate
1999 Pairs						
Hospitals	6,712	6,712	6,160	0.909	0.053	0.039
Office-based providers	11,974	11,974	10,409	0.879	0.061	0.060
HMOs	555	555	472	0.886	0.068	0.047
Home care providers	394	394	340	0.818	0.088	0.094
Institutions	53	53	45	0.756	0.200	0.044
SBDs	14,907	14,907	10,101	0.808	0.091	0.100
Pharmacies	13,183	13,183	11,317	0.788	0.099	0.113
Total	47,778	47,778	38,844			
2000 Pairs						
Hospitals	7,849	7,849	7,016	0.891	0.056	0.053
Office-based providers	17,407	17,407	14,935	0.854	0.079	0.067
HMOs	382	382	324	0.873	0.059	0.068
Home care providers	367	367	317	0.864	0.063	0.073
Institutions	66	66	63	0.825	0.095	0.079
SBDs	15,955	15,955	9,893	0.823	0.094	0.084
Pharmacies	14,847	14,847	12,728	0.768	0.105	0.127
Total	56,873	56,873	45,276			
2001 Pairs						
Hospitals	11,798	11,377	10,155	0.899	0.023	0.051
Office-based providers	33,518	26,886	23,376	0.843	0.077	0.081
HMOs	965	791	637	0.878	0.028	0.094
Home care providers	607	601	471	0.847	0.064	0.089
Institutions	86	86	79	0.937	0.051	0.013
SBDs	28,905	28,905	17,529	0.778	0.127	0.095
Pharmacies	22,165	22,165	19,256	0.703	0.144	0.153
Total	98,044	90,811	71,503			

Table A-5. MPC data collection results, patient-provider pair level, 1996-2008 (continued)

	Initial sample	Initial sample after subsampling	Final eligible sample	Response rate	Refusal rate	Other nonresponse rate
2002 Pairs						
Hospitals	16,481	14,477	12,805	0.895	0.061	0.045
Office-based providers	42,327	19,309	17,198	0.832	0.104	0.065
HMOs	1,134	567	477	0.870	0.052	0.078
Home care providers	713	682	606	0.820	0.100	0.081
Institutions	116	115	107	0.907	0.056	0.037
SBDs	30,780	30,780	19,977	0.745	0.160	0.095
Pharmacies	26,046	26,046	23,057	0.734	0.156	0.110
Total	117,597	91,976				
2003 Pairs						
Hospitals	13,876	13,094	11,532	0.895	0.052	0.054
Office-based providers	36,804	19,731	17,692	0.828	0.103	0.070
HMOs	939	625	466	0.852	0.054	0.094
Home care providers	652	641	579	0.853	0.067	0.079
Institutions	86	85	77	0.948	0.026	0.026
SBDs	26,965	26,965	17,566	0.804	0.152	0.045
Pharmacies	22,438	22,438	19,649	0.671	0.251	0.078
Total	101,760	83,579	67,561			
2004 Pairs						
Hospitals	13,175	12,772	11,589	0.922	0.028	0.05
Office-based providers	34,611	26,392	23,446	0.858	0.084	0.058
HMOs	791	665	514	0.813	0.088	0.099
Home care providers	610	610	555	0.805	0.115	0.080
Institutions	94	94	90	0.911	0.056	0.033
SBDs	29,271	29,271	18,694	0.827	0.103	0.07
Pharmacies	21,720	21,720	18,571	0.715	0.214	0.071
Total	100,272	91,524	73,549			

Table A-5. MPC data collection results, patient-provider pair level, 1996-2008 (continued)

	Initial sample	Initial sample after subsampling	Final eligible sample	Response rate	Refusal rate	Other nonresponse rate
2005 Pairs						
Hospitals	12,933	12,601	11,279	0.923	0.036	0.041
Office-based providers	33,854	24,517	21,821	0.852	0.094	0.054
HMOs	804	685	514	0.955	0.014	0.031
Home care providers	689	689	619	0.816	0.113	0.071
Institutions	123	123	113	0.965	0.009	0.027
SBDs	28,930	28,930	18,720	0.824	0.114	0.063
Pharmacies	21,077	21,077	18,159	0.711	0.214	0.075
Total	98,410	91,976	74,227			
2006 Pairs						
Hospitals	13,071	11,911	10,830	0.934	0.031	0.035
Office-based providers	37,576	17,139	15,274	0.861	0.082	0.056
HMOs	694	594	476	0.903	0.059	0.038
Home care providers	719	719	661	0.847	0.082	0.071
Institutions	80	80	78	0.808	0.115	0.077
SBDs	31,058	31,058	18,699	0.807	0.144	0.049
Pharmacies	20,990	20,990	17,418	0.734	0.196	0.07
Total	104,188	91,976	74,227			
2007 Pairs						
Hospitals	11,220	10,646	9,611	0.929	0.032	0.039
Office-based providers	30,812	19,021	16,713	0.870	0.083	0.047
HMOs	852	621	459	0.919	0.046	0.035
Home care providers	574	572	513	0.887	0.057	0.056
Institutions	78	78	75	0.933	0.040	0.027
SBDs	26,407	26,407	16,660	0.864	0.046	0.090
Pharmacies	19,052	19,052	16,313	0.737	0.217	0.046
Total	88,995	76,397	60,344			

Table A-5. MPC data collection results, patient-provider pair level, 1996-2008 (continued)

	Initial sample	Initial sample after subsampling	Final eligible sample	Response rate	Refusal rate	Other nonresponse rate
2008 Pairs						
Hospitals	11,374	10,672	9,600	0.943	0.026	0.034
Office-based providers	32,546	13,917	12,281	0.884	0.077	0.054
HMOs	968	572	449	0.958	0.002	0.042
Home care providers	566	564	502	0.902	0.077	0.031
Institutions	81	80	75	0.947	0.042	0.014
SBDs	27,496	27,496	16,144	0.846	0.133	0.049
Pharmacies	19,678	19,678	17,038	0.706	0.356	0.060
Total	92,709	72,979	56,089			

Table A-6. Refusal conversion outcomes, 1998-2008*

		Ever coded refusal		Final disposition of refusals							
				Out of scope		Final refusal		Other nonresponse		Complete	
	Initial sample (N)	N	Percent of initial sample	N	Percent of refusals	N	Percent of refusals	N	Percent of refusals	N	Percent of refusals
1998											
Hospitals—medical records	4,723	466	9.9	30	6.4	99	21.2	7	1.5	330	70.8
Hospitals—patient accounts	4,723	142	3.0	2	1.4	11	7.7	1	0.7	128	90.1
Hospitals—admin offices	4,723	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Office-based providers	8,701	775	8.9	54	7.0	245	31.6	44	5.7	432	55.7
Pharmacies	6,450	97	1.5	2	2.1	46	47.4	2	2.1	47	48.5
SBDs	11,394	1,477	13.0	203	13.7	585	39.6	63	4.3	626	42.4
1999											
Hospitals—medical records	4,794	468	9.8	34	7.3	68	14.5	10	2.1	356	76.1
Hospitals—patient accounts	4,794	146	3.0	2	1.4	16	11.0	1	0.7	127	87.0
Hospitals—admin offices	4,794	19	0.4	0	-	3	15.8	0	0.0	16	84.2
Office-based providers	9,586	1,041	10.9	41	3.9	356	34.2	41	3.9	603	57.9
Pharmacies	5,703	239	4.2	10	4.2	144	60.3	13	5.4	72	30.1
SBDs	11,555	641	5.5	102	15.9	259	40.4	27	4.2	253	39.5
2000											
Hospitals—medical records	5,078	481	9.5	31	6.4	84	17.5	21	4.4	345	71.7
Hospitals—patient accounts	5,078	203	4.0	13	6.4	17	8.4	9	4.4	164	80.8
Hospitals—admin offices	5,078	72	1.4	10	13.9	15	20.8	2	2.8	45	62.5
Office-based providers	13,723	1,300	9.5	78	6.0	544	41.8	58	4.5	620	47.7
Pharmacies	5,762	523	9.1	18	3.4	306	58.5	21	4.0	178	34.0
SBDs	11,889	1,074	9.0	177	16.5	454	42.3	92	8.6	351	32.7
2001											
Hospitals—medical records	8,023	883	11.0	57	6.5	150	17.0	22	2.5	654	74.1
Hospitals—patient accounts	8,023	272	3.4	8	2.9	22	8.1	8	2.9	234	86.0
Hospitals—admin offices	8,023	45	0.6	1	2.2	8	17.8	2	4.4	34	75.6
Office-based providers	21,438	2,708	12.6	177	6.5	980	36.2	125	4.6	1,426	52.7
Pharmacies	9,118	762	8.4	26	3.4	529	69.4	19	2.5	188	24.7
SBDs	22,234	2,299	10.3	335	14.5	1,188	51.7	101	4.4	675	29.4

* See note at end of table.

Table A-6. Refusal conversion outcomes, 1998-2008* (continued)

		Ever coded refusal		Final disposition of refusals							
				Out of scope		Final refusal		Other nonresponse		Complete	
	Initial sample (N)	N	Percent of initial sample	N	Percent of refusals	N	Percent of refusals	N	Percent of refusals	N	Percent of refusals
2002											
Hospitals—medical records	9,257	1,922	20.8	95	5.0	385	20.0	58	3.0	1,384	72.0
Hospitals—patient accounts	9,257	946	10.2	31	3.3	204	21.5	16	1.7	695	73.5
Hospitals—admin offices	9,257	216	2.3	18	8.3	122	56.5	3	1.4	73	33.8
Office-based providers	15,954	3,360	21.1	187	5.6	1,421	42.3	119	3.5	1,633	48.6
Pharmacies	11,689	1,710	14.6	78	4.6	830	48.5	101	5.9	701	41.0
SBDs	23,068	3,311	14.4	443	13.4	1,958	59.1	48	1.4	862	26.0
2003											
Hospitals—medical records	8,392	1,050	12.5	70	6.7	310	29.5	29	2.8	641	61.0
Hospitals—patient accounts	8,392	754	8.9	26	3.4	179	23.7	8	1.1	541	71.8
Hospitals—admin offices	8,392	184	2.2	7	3.0	115	62.5	1	0.05	61	33.2
Office-based providers	16,116	2,556	15.9	107	4.2	1,303	50.9	51	2.0	1,095	42.9
Pharmacies	10,570	908	8.6	45	4.9	434	47.8	19	2.1	410	45.1
SBDs	20,160	2,285	11.3	333	14.6	1,126	49.9	28	1.2	798	34.9
2004**											
Hospitals—medical records	8,377	1,260	15.0	74	5.9	241	19.1	42	3.3	903	71.7
Hospitals—patient accounts	8,377	1,016	12.1	37	3.6	241	23.7	22	2.2	716	70.5
Hospitals—admin offices	8,377	345	4.1	2	***	241	69.9	12	3.5	90	26.1
Office-based providers	21,487	3,367	15.7	154	4.5	1,504	44.7	85	2.5	1,624	48.2
Pharmacies	10,204	2,081	20.4	68	3.3	1,548	74.4	22	1.1	443	21.3
SBDs	21,578	3,368	15.6	416	12.4	1,429	42.4	15	***	1,508	44.7
2005**											
Hospitals—medical records	8,380	1,026	12.2	80	7.8	240	23.4	45	4.4	661	64.4
Hospitals—patient accounts	8,380	1,040	12.4	59	5.7	240	23.1	14	1.3	727	69.9
Hospitals—admin offices	8,380	365	4.4	66	18.1	240	65.8	5	1.4	54	14.8
Office-based providers	19,936	3,332	16.7	189	5.7	1,554	46.6	84	2.5	1,505	45.2
Pharmacies	9,983	2,004	20.1	54	2.7	1,602	79.9	19	***	329	16.4
SBDs	21,292	3,476	16.3	655	18.8	1,317	37.9	34	1.0	1,470	42.3

*See note at end of table.

Table A-6. Refusal conversion outcomes, 1998-2008* (continued)

		Ever coded refusal		Final disposition of refusals							
				Out of scope		Final refusal		Other nonresponse		Complete	
	Initial sample (N)	N	Percent of initial sample	N	Percent of refusals	N	Percent of refusals	N	Percent of refusals	N	Percent of refusals
2006											
Hospital–medical records	8,041	944	11.7	60	6.4	209	22.1	18	1.9	657	69.6
Hospital–patient accounts	8,041	1,123	14.0	47	4.2	208	18.5	15	1.3	853	76.0
Hospital–admin offices	8,041	266	3.3	32	12.0	199	74.8	2	0.8	33	12.4
Office-based providers	14,058	2,565	18.2	148	5.8	948	37.0	57	2.2	1,412	55.0
Pharmacies	10,917	1,929	17.7	73	3.8	1,509	78.2	31	1.6	316	16.4
SBDs	23,399	3,602	15.4	771	21.4	1,785	49.6	9	0.2	1,037	28.8
2007											
Hospital–medical records	7,738	1,008	13.0	59	5.8	178	17.6	27	2.7	744	73.8
Hospital–patient accounts	7,738	1,223	15.8	79	6.5	179	14.6	21	1.7	944	77.2
Hospital–admin offices	7,738	204	2.6	15	7.3	176	86.3	0	0	13	6.4
Office-based providers	15,943	2,743	17.2	161	5.9	1,095	39.9	63	2.3	1,424	51.9
Pharmacies	9,767	1,442	14.8	20	1.4	1,337	92.7	3	0.0	82	5.7
SBDs	12,172	2,607	12.3	551	21.1	1,167	44.8	17	0.7	872	33.4
2008											
Hospital–medical records	6,932	1,139	16.4	58	5.1	148	13.0	17	1.5	916	80.4
Hospital–patient accounts	6,932	1,277	18.4	60	4.7	148	11.6	39	3.1	1,030	80.7
Hospital–admin offices	6,932	180	2.6	14	7.8	140	77.8	0	0	26	14.4
Office-based providers	11,277	1,945	17.2	104	5.3	615	31.6	67	3.4	1,159	59.8
Pharmacies	9,334	2,110	22.6	37	1.8	1,770	83.9	43	2.0	260	12.3
SBDs	21,071	2,858	13.6	558	19.5	1,253	43.8	19	0.7	1,028	36.0

**The denominator for "ever coded refusal" includes provider-wave cases ever coded an interim refusal (2* or 3*) or a final refusal (H* or R*) without being coded an interim refusal.

***Less than one percent.